

## Optical Parametric Oscillators Lidar Sounding of Trace Atmospheric Gases in the 3-4 $\mu\text{m}$ Spectral Range

**Authors :** Olga V. Kharchenko

**Abstract :** Applicability of a KTA crystal-based laser system with optical parametric oscillators (OPO) generation to lidar sounding of the atmosphere in the spectral range 3–4  $\mu\text{m}$  is studied in this work. A technique based on differential absorption lidar (DIAL) method and differential optical absorption spectroscopy (DOAS) is developed for lidar sounding of trace atmospheric gases (TAG). The DIAL-DOAS technique is tested to estimate its efficiency for lidar sounding of atmospheric trace gases.

**Keywords :** atmosphere, lidar sounding, DIAL, DOAS, trace gases, nonlinear crystal

**Conference Title :** ICRSG 2016 : International Conference on Remote Sensing and Geoinformation

**Conference Location :** London, United Kingdom

**Conference Dates :** July 28-29, 2016